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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,278

08/22/2003

Natalie A. Solov

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08/12/2005

WEGMAN, HESSLER & VANDERBURG  
6055 ROCKSIDE WOODS BOULEVARD  
SUITE 200  
CLEVELAND, OH 44131

EXAMINER

YOON, TAE H

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/646,278

Applicant(s)

SOLOV ET AL.

Examiner

Tae H. Yoon

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1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3 and 6-11 is/are allowed.
- 6) ☒ Claim(s) 12-15 is/are rejected.
- 7) ☒ Claim(s) 2, 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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The recited "a water soluble cation such as Na, K, Ca or NH<sub>4</sub>" in claims 2, 4, 5, 13, 14 and 15 is objected since it is a range within a range, and separate claims with said narrower limitation is suggested.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al (US 4,872,995) and Fiarman et al (US 5,294,686).

Chen et al teach the instant copolymers except the use of a chain transfer agent, hypophosphorous acid or its salts thereof, at col. 6 and in examples. Chen et al also teach that a molecular weight of 1,500 to 25,000 is most desirable at col. 5, lines 21-27. The use of a chain transfer agent in order to regulate molecular weights is well known practice and Fiarman et al teach the use of the instant chain transfer agent, hypophosphorous acid or its salts thereof, in obtaining low molecular weight acrylic acid copolymers in examples and at col. 1, lines 10-15 and col. 2, lines 15. Fiarman et al teach that at least 90 percent of the hypophosphorous acid chain transfer agent is incorporated into the polymer backbone at col. 2, lines 50-55.

It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the hypophosphorous acid chain transfer agent of Fiarman et al in obtaining copolymers of Chen et al since Chen et al teach that a molecular weight of

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1,500 to 25,000 is most desirable and since Fiarman et al teach the use of the instant chain transfer agent, hypophosphorous acid or its salts thereof, in obtaining low molecular weight (below 10,000) acrylic acid copolymers absent showing otherwise.

Claims 1, 3 and 6-11 are allowed.

Claims 2, 4 and 5 are objected since it recites a range within a range, but would be allowable if rewritten in dependent form.

Fiarman, et al teach a process of adding the chain transfer agent before adding monomers which differs from the instant process. Blankenship et al (US 5,256,746) teach cofeed solutions of acrylic acid, an initiator and a chain transfer agent in example 1, but does not address the instant feed rates.

The examiner cannot find a copy of JP-93660 and thus it has been crossed-out from the PTO-1449.

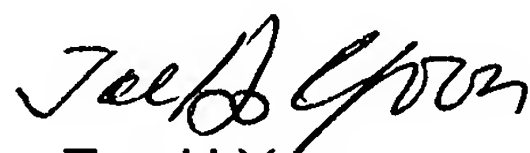
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H. Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Tae H Yoon  
Primary Examiner  
Art Unit 1714

THY/August 9, 2005